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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/638,192	08/15/2000	Ivan A. Cowie	28549-165559	1610

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EXAMINER	
MUNOZ, GUILLERMO	

ART UNIT	PAPER NUMBER
2634	21

DATE MAILED: 04/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/638,192	COWIE ET AL.	
	Examiner	Art Unit	
	Guillermo Munoz	2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *amendment filed January 28, 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-50* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,6-11,17-19,22-24,26,31-36,42-44 and 47-49* is/are rejected.

7)☒ Claim(s) *12-16,20,25,37-41,45 and 50* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1, 6-20, 22-26, and 31-45, 47-50 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 6-11, 17-19, 22-24, 26, 31-36, 42-44, and 47-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rybicki et al. (US 6,212,230 B1) in view of McCorkle et al. (US 2003/0053555 A1) and in further view of Cassia et al. (US 5,987,068).

Regarding claims 1 and 26, Rybicki et al. disclose a Pulse Position Modulation Method and Apparatus which teaches all the claimed subject matter, note figures 1, 2, and 4, col. 5, line 20 to col. 6, line 60, and col. 7, line 24 to col. 8, line 3. Rybicki et al. teach a code generator which can have at least two code element values, as illustrated in figure 4. Further, Rybicki et al. teach associating an amplitude pulse characteristic with the generated code, note column 6, lines 13-35; associating a pulse width with a generated code in Col. 14, lines 16-25; except their code generator does not contain polarity characteristics.

McCorkle et al. teach the use of inverted or non-inverted copies of coded data for the purpose of communicating information in a pulse position modulation system (page 1, paragraph 0010).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Rybicki et al.'s impulse communication system with McCorkle et al.'s teaching of using inverted or non-inverted copies of coded information, since McCorkle et al. suggest on page 3, paragraph 0047 that the result of this modulation would help to generate larger collections of codes.

Cassia et al. teach the use of orthogonal pulse shapes for the purpose of transmitting supplemental data over a frequency channel, note Col. 3, lines 22-23, Col. 6, lines 15-17. Cassia et al. do not explicitly recite "Channelization", however, the function of transmitting two or more signals over a single frequency using orthogonal pulse shapes to reduce the amount of interfering between the signals is the same.

Therefore, it would have been obvious to one having ordinary skill in the art to modify the pulse shapes taught by Rybicki et al. and McCorkle et al. with Cassia et al.'s teaching of using orthogonal pulse shapes, since Cassia et al. suggest on Col. 3, line 5 that the result of this modification would enhance the communication capability.

Regarding claims 6 and 31, Rybicki et al. further teach the claimed subject matter "code element...pulse characteristic" in figure 4.

Regarding claims 7 and 32, see claim 6 above.

Regarding claims 8 and 33, Rybicki et al. further teach the claimed subject matter "code element...comprises an integer" in figure 4.

Regarding claims 9, 10, 34 and 35, Rybicki et al. further teach the claimed subject matter "code element values indicate...range of non-temporal pulse characteristic values" in figures 4, 13 and 26.

Regarding claims 11and 36, McCorkle et al. further teach the claimed subject matter in page 4, paragraph 0071.

Regarding claims 17-19 and 42-44, Rybicki et al. further teaches the value of pulse characteristic is specified within a value component, note figure 4.

Regarding claims 21 and 46, see claim 4.

Regarding claims 23 and 48, Rybicki et al. teach the claimed subject matter "code element...pulse characteristic values" in table listed in columns 8-12.

Regarding claims 24 and 49, Rybicki et al. further teach the claimed subject matter "each code element value...pulse characteristic values" in Col. 7, lines 30-46 or Col.24, lines 43-56.

Claim Objections

Claims 12-16, 20, 25, 37-41, 45, and 50 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guillermo Munoz whose telephone number is 703-305-4224. The examiner can normally be reached on Monday-Friday 8:30a.m-4:30p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Guillermo Munoz

GM
April 7, 2004

STEPHEN CHIN
SUPERVISORY PATENT EXAMINE
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